

	Centerwide System Level Procedure ISO 9001 - Ames Research Center	Document #: 53.ARC.0015	Rev.: 3
Title: Handling, Storage, Packaging, Preservation, and Delivery			Page #: 1 of 4

REVISION HISTORY			
REV	Description of Change	Author	Effective Date
0	Initial Release	D. Mayer	5/27/98
1	Clarifications based on 7/98 DNV Audit and 6/98 Internal Audit (see DCR 98-024). Major rewrite.	M. Hines	9/16/98
2	Administrative change (DCR 98-053)	R. Serrano	12/18/98
3	Adjustment for ESD (DCR 00-006)	R Chase	5/30/00

REFERENCE DOCUMENTS	
Document Number	Document Title
53.ARC.0000	Ames Research Center Quality Manual, Section 4.15
NASA-STD 8739.7	Electrostatic Discharge Control (Excluding Electrically Initiated Explosive Devices)

Documents referenced in this procedure are applicable to the extent specified herein.

1. Purpose


This procedure defines requirements and methods for the handling, storage, packaging, preservation, and delivery of material and products in accordance with the Ames Research Center (ARC) Quality Manual.

2. Scope

This procedure applies to organizations that supply hardware, systems, electronic media, or biological material and product to ARC customers.

3. Definitions and Acronyms

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| 3.1. | Customer | Any organization or individual that enters into a formal agreement with ARC for delivery of ARC products or services |
| 3.2. | Handler | Person who arranges product for delivery or moves, stores, or packages the product |

	Centerwide System Level Procedure ISO 9001 - Ames Research Center	Document #: 53.ARC.0015	Rev.: 3
Title: Handling, Storage, Packaging, Preservation, and Delivery			Page #: 2 of 4

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| 3.3. | Material | Hardware, software media, raw materials, or sub-assemblies that will be incorporated into or used in the development or testing of ARC products |
| 3.4. | Responsible Manager | Person having the responsibility and authority to accomplish/implement a specific activity or process (includes organizational line managers, project managers, etc.) |
| 3.5. | Electrostatic Dis-charge (ESD) | The transfer of an electrostatic charge between bodies at different electrostatic potentials caused by direct contact or induced by an electrostatic field. |

4. Flowchart


There is no flowchart required for this document.

5. Responsibilities

- 5.1. **System Safety and Mission Assurance (SS&MA) Division**, Code QS, is responsible for establishing and administering an ESD Verification Control program in accordance with NASA-STD 8739.7.
- 5.2. **Responsible Manager** shall:
- determine special handling, storage, packaging, preservation, and delivery requirements,
 - create or reference procedures to implement special handling, storage, packaging, and delivery requirements, and
 - ensure that ESD sensitive items are properly identified, packaged, handled, and transported in accordance with NASA-STD 8739.7.
- 5.3. **Handler** shall:
- implement standard and special handling, storage, packaging, preservation, and delivery procedures.
 - comply with NASA-STD 8739.7 in maintaining ESD protected areas for processing and handling of ESD sensitive items.

6. Procedure

- 6.1. Handling – actions taken to move or handle product while preventing damage or deterioration
- 6.1.1. Standard warehouse handling practices shall be considered acceptable unless special handling is required. If special handling is required, see the “Special handling, storage, packaging, preservation,

	Centerwide System Level Procedure ISO 9001 - Ames Research Center	Document #: 53.ARC.0015	Rev.: 3
Title: Handling, Storage, Packaging, Preservation, and Delivery			Page #: 3 of 4

or delivery” section of this procedure.

- 6.1.2. Electronic media shall be handled in accordance with the manufacturer’s recommendations.

	Centerwide System Level Procedure ISO 9001 - Ames Research Center	Document #: 53.ARC.0015	Rev.: 3
Title: Handling, Storage, Packaging, Preservation, and Delivery			Page #: 4 of 4

6.1.3. Handling ESD sensitive items:

6.1.3.1.processing and handling of ESD sensitive items is done as required by NASA-STD 8739.7.

6.1.3.2.ESD protected areas are maintained in a clean and orderly condition.

6.1.3.3.Materials prohibited by NASA-STD 8739.7 are not present.

6.1.3.4.Workstation discrepant conditions are reported to the area responsible manager.

6.1.3.5.That wrist straps and humidity checks are done in accordance with NASA-STD 8739.7.

6.2. Storage – keeping product free from damage or deterioration until ready to deliver to a customer


6.2.1. Standard warehouse storage conditions shall be considered acceptable unless special storage is required. If special storage is required, see the “Special handling, storage, packaging, preservation, or delivery” section of this procedure.

6.2.2. Office storage shall be considered acceptable storage for electronic media, unless otherwise specified by the Responsible Manager.

6.2.3. If storage areas other than ARC warehouse areas, laboratories, and shop floors are to be used for storing material or product, the Responsible Manager shall designate such areas and specify any applicable authorizations for receipt into and release from these storage areas.


6.2.4. ARC 65 and the ARC 66 shall be used to control shipping of products through the ARC warehouse. ARC 144 shall be used to place material or product in long-term storage in the warehouse. The Responsible Manager of the ARC warehouse shall establish other procedures for authorization of receipt into and dispatch from the warehouse. Authorizations for receipt into and release from laboratories and shop floors is not required unless specified by the Responsible Manager.

6.2.5. If product or material is stored for a period of time such that deterioration could occur, the Responsible Manager shall decide the intervals and methods for assessing the condition of the product stored. The Responsible Manager shall ensure the assessment is

	Centerwide System Level Procedure ISO 9001 - Ames Research Center	Document #: 53.ARC.0015	Rev.: 3
Title: Handling, Storage, Packaging, Preservation, and Delivery			Page #: 5 of 4

performed.

- 6.3. Packaging – final product shipping container, packing material, and the marking of the container
 - 6.3.1. Packaging recommended by the carrier shall be considered acceptable unless special packaging is required. If special packaging is required, see the “Special handling, storage, packaging, preservation, or delivery” section of this procedure.
 - 6.3.2. Packaging recommended by the manufacturer or the carrier shall be considered acceptable for electronic media.
 - 6.3.3. The package shall be clearly marked with a shipping destination and originating organization.
- 6.4. Preservation – measures taken to ensure that product does not deteriorate before delivery
 - 6.4.1. Standard warehouse environmental conditions shall be considered acceptable for preservation unless a special storage environment is required. If a special environment is required, see the “Special handling, storage, packaging, preservation, or delivery” section of this procedure.
 - 6.4.2. Storage in an office environment shall be considered acceptable preservation for electronic media unless otherwise specified by the Responsible Manager.
- 6.5. Delivery – the method of transferring product from ARC to a customer
 - 6.5.1. Common carrier shall be considered acceptable for delivery unless there are special delivery requirements. If there are special delivery requirements, see the “Special handling, storage, packaging, preservation, or delivery” section of this procedure.
 - 6.5.2. Common carrier shall be considered acceptable for delivery of electronic media.
 - 6.5.3. Where required by customer agreement, the means of ensuring protection of the product until it reaches the destination shall be specified by the Responsible Manager (using ARC 66).
- 6.6. Special handling, storage, packaging, preservation, or delivery
 - 6.6.1. If special handling, storage, packaging, preservation, or delivery is required, the Responsible Manager shall define the special

	Centerwide System Level Procedure ISO 9001 - Ames Research Center	Document #:	Rev.:
		53.ARC.0015	3
Title: Handling, Storage, Packaging, Preservation, and Delivery		Page #: 6 of 4	

requirements and either:

- 6.6.1.1. Reference existing procedures that cover the special requirements, or
- 6.6.1.2. Create procedures to cover the special requirements.
- 6.6.2. The Responsible Manager shall ensure that Handler(s) have access to procedures covering special requirements.
- 6.6.3. Handler(s) shall implement procedures covering special requirements when handling, storing, packaging, preserving, or delivering material and products.
- 6.6.4. Examples of products that have special handling, storing, packaging, preservation, or delivery requirements include biological, radioactive, explosive, flammable, highly pressurized, corrosive or reactive, or temperature sensitive material and product.

7. Metrics

There are no metrics required for this document.

8. Quality Records

There are no Quality Records required for this document.

9. Form(s)

Forms required for this document:

Form Number	Title
ARC 65	Shipping Document Short Form
ARC 66	Ames Shipping Request
ARC 144	Request for Custodial Storage